



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,715	06/30/2006	Peter Schreiber	8071.004.PCUS00	6818
26474	7590	12/14/2007	EXAMINER	
NOVAK DRUCE DELUCA + QUIGG LLP			STAFIRA, MICHAEL PATRICK	
1300 EYE STREET NW			ART UNIT	
SUITE 1000 WEST TOWER			PAPER NUMBER	
WASHINGTON, DC 20005			2886	
MAIL DATE		DELIVERY MODE		
12/14/2007		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/552,715	SCHREIBER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Michael P. Stafira	2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-21 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3-17 and 21 is/are rejected.
- 7) Claim(s) 2 and 18-20 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 07 October 2005 is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/7/2005
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the optical fiber is aligned in an obliquely inclined angle or is arranged offset etc.. or a transmission grating is constructed on the end of the end face, or free spaces between focusing optical elements must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet”

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

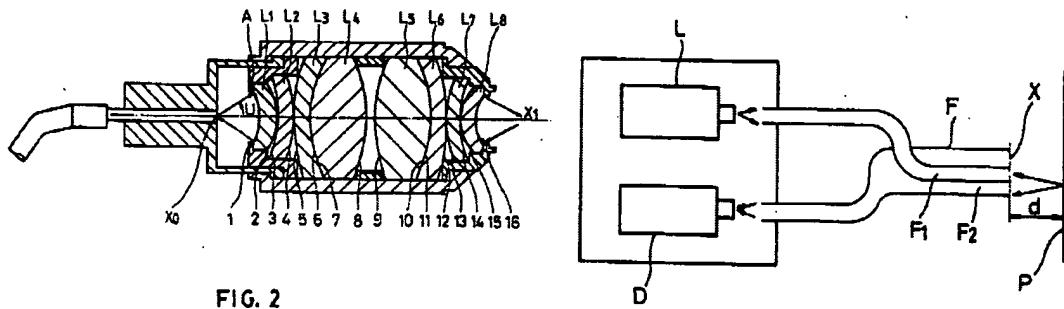
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 4, 6-9, 11, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Chao et al. ('515).

**Claim 1**

Chao et al. ('515) discloses determining the distance of a reflecting surface (Fig. 4a, Ref. P) onto which light from a light source (Fig. 4a, Ref. L) is directed via a first optical fiber (Fig. 2, Ref. X0) and from which reflected light passes onto at least one statically arranged optical detector (Fig. 4a, Ref. D) via the first optical fiber or at least one further optical fiber (See Fig. 4a), characterized in that the light runs on to the reflecting surface (Fig. 4a, Ref. P) and from the reflecting surface (Fig. 4a, Ref. P) via at least one optical element (Fig. 2, Ref. L8), collimating in the direction of the reflecting surface (Fig. 2, Ref. L4, L5), and at least two optical elements (Fig. 2, Ref. L6, L7) that focus in the direction of the reflecting surface ((Fig. 4a, Ref. P) and whose optical axes are aligned parallel to the optical axis of the collimating optical element (Fig. 2, Ref. L4, L5) and are arranged at prescribed spacing's from one another (See Fig. 2).



### **Claim 3**

Chao et al. ('515) discloses the focusing optical elements (Fig. 2, Ref. L6, L7) are arranged equidistantly from one another (See Fig. 2).

### **Claim 4**

Chao et al. ('515) further discloses the focusing optical elements (Fig. 2, Ref. L6, L7) are arranged at a constant distance from the collimating optical element (Fig. 2, Ref. L4, L5).

### **Claim 6**

Chao et al. ('515) further discloses the convex surfaces of the focusing optical elements (Fig. 2, Ref. L6, L7) are aspherically curved (See Fig. 2).

### **Claim 7**

The reference of Chao et al. ('515) further discloses that the collimating optical element (Fig. 2, Ref. L4, L5) is a plano-convex optical lens (See Fig. 2).

### **Claim 8**

Chao et al. ('515) further discloses that the convex surface of the collimating optical element (Fig. 2, Ref. L6, L7) is aspherically curved (See Fig. 2).

### **Claim 9**

Chao et al. ('515) further discloses the end face of the at least one further optical fiber,

into which the reflected light can be coupled, is arranged immediately next to the end face of the first optical fiber from which light from the light source exits (Fig. 4a, Ref. F, F1, F2).

**Claim 11**

Chao et al. ('515) discloses the end face(s) of the first optical fiber and/or the at least one further optical fiber (Fig. 2, Ref. X0) is/are aligned orthogonal to the optical axis of the collimating optical element (Fig. 2, Ref. L4, L5).

**Claim 17**

Chao et al. ('515) discloses free spaces are present between focusing optical elements (Fig. 2, Ref. L6, L7).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 10, 12-16, 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Chao et al. ('515).

**Claim 5**

Chao et al. ('515) discloses the claimed invention except for the focusing optical element is constructed of a cylindrical lens. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Chao et al. ('515) with the cylindrical lens

since it was well known in the art that using a cylindrical lens increases the area at which can be inspected at one time, therefore decreasing the amount of time needed to scan a surface.

**Claim 10**

Chao et al. ('515) discloses the claimed invention except for a fiber brancher/backward coupler. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Chao et al. ('515) with the brancher/backward coupler since it was well known in the art that using a coupler reduces the amount of fiber needed to take measurements, therefore reducing cost of the apparatus and size.

**Claims 12-13**

Chao et al. ('515) discloses the claimed invention except for the optical fiber is at an obliquely inclined angle or offset from the optical axis. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Chao et al. ('515) with the different alignments of the optical fiber since it was well known in the art that having the fiber at different angle can reduce the amount of noise for the optical source from entering the optical fiber, therefore increasing the sensitivity of the measurement.

**Claim 14**

Chao et al. ('515) discloses the claimed invention except for a grating at the end face of the optical fiber. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Chao et al. ('515) with the grating since it was well known in the art that a grating can separate light into different components, therefore allowing the apparatus to selectively block certain components from reaching the detector.

**Claim 15**

Chao et al. ('515) discloses the claimed invention except for the light source is an LED or laser diode. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Chao et al. ('515) with an LED or laser diode since it was well known in the art that LED's and diodes have longer illumination life, therefore decreasing the amount of maintenance needed.

**Claim 16**

Chao et al. ('515) discloses the claimed invention except for the reflecting surface is part of a pellicle or is arranged on a pellicle. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Chao et al. ('515) with a pellicle since it was well known in the art that it is a known reflecting surface, therefore increasing the reliability of the measured light.

**Claim 21**

Chao et al. ('515) discloses the claimed invention except for the arrangement forms an optical microphone. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Chao et al. ('515) with the optical microphone since it was well known in the art that an optical microphone produces less noise and therefore is more accurate.

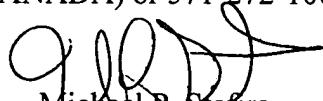
***Allowable Subject Matter***

7. Claims 2, 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael P. Stafira  
Primary Examiner  
Art Unit 2886

Application/Control Number:  
10/552,715  
Art Unit: 2886

Page 9

December 3, 2007